

What is claimed is:

1. An integrated process for the production of acetic acid and vinyl acetate comprising the steps:
  - 5           (a) producing in a first reaction zone a first product stream comprising acetic acid;
  - (b) contacting in a second reaction zone an acetic acid reaction stream comprised of at least a portion of the acetic acid from the first product stream with an oxygen-containing gas in the presence of a catalyst to produce a second
  - 10       product stream comprising vinyl acetate monomer;
  - (c) directing at least a portion of the second product stream to a purification section to purify at least a portion of the vinyl acetate in the second product stream; and
  - (d) removing heat from at least a portion of the first product stream and
  - 15       providing at least a portion of the heat removed from the first product stream to at least one of the acetic acid reaction stream and the purification section for purifying the vinyl acetate.
2. The process of claim 1 wherein the first product stream is produced by
- 20       contacting in the first reaction zone a gaseous feedstock comprising a hydrocarbon selected from the group consisting of ethylene, ethane, and mixtures thereof with an oxygen-containing gas in the presence of a catalyst.
3. The process of claim 1 wherein the first product stream is produced by
- 25       carbonylation of an alkyl alcohol with carbon monoxide in a liquid reaction medium in the first reaction zone.
4. The process of claim 3 wherein the heat removed from at least a portion of the first product stream is transferred to a steam condensate stream which is used to
- 30       provide heat to at least one of the acetic acid reaction stream and the purification section for purifying the vinyl acetate.

5. The process of claim 4 wherein the steam condensate stream is directed to a flash vessel maintained at a temperature of about 150° C to about 160° C.
6. The process of claim 5 wherein the flash vessel is maintained at a pressure of about 4.0 kg/cm<sup>2</sup> to about 5.3 kg/cm<sup>2</sup>.
7. The process of claim 4 wherein heat is transferred from the steam condensate to a vinyl acetate azeotrope column feed stream.
8. The process of claim 4 wherein heat is transferred from the steam condensate to a reboil stream of a light ends column in the purification section for purifying the vinyl acetate.
9. The process of claim 4 wherein heat is transferred from the steam condensate to a reboil stream used in conjunction with a finishing column in the purification section for purifying the vinyl acetate.
10. The process of claim 4 wherein heat is transferred from the steam condensate the acetic acid reaction stream.
11. The process of claim 4 wherein heat is transferred from the steam condensate to a reboil stream of a light ends column in the purification section for purifying the vinyl acetate and to a reboil stream used in conjunction with a finishing column in the purification section for purifying the vinyl acetate.
12. An integrated system for producing acetic acid and vinyl acetate comprising:
  - (a) means for producing acetic acid though a reaction generating heat;
  - (b) means for purifying acetic acid produced in the means for producing acetic acid;
  - (c) means for producing vinyl acetate from at least a portion of the acetic acid produced in the means for producing acetic acid;

(d) means for purifying vinyl acetate produced in the means for producing vinyl acetate; and

(e) means for transferring at least a portion of the heat generated in the production of acetic acid in the means for producing acetic acid to at least one of  
5 the means for producing vinyl acetate and the means for purifying vinyl acetate.

13. An integrated system for producing acetic acid and vinyl acetate comprising:

(a) a first reactor for producing acetic acid through a reaction generating heat;

10 (b) a first purification section for purifying acetic acid produced in the first reactor;

(c) a second reactor for producing vinyl acetate from at least a portion of the acetic acid produced in the first reactor;

(d) a second purification section for purifying vinyl acetate produced in  
15 the second reactor; and

(e) heat exchange equipment for transferring at least a portion of the heat generated in the production of acetic acid in the first reactor to at least one of the second reactor and the second purification section.

20 14. The integrated system of claim 13 wherein the first reactor has a reaction zone for reacting gaseous feedstock comprising a hydrocarbon selected from the group consisting of ethylene, ethane, and mixtures thereof with an oxygen-containing gas in the presence of a catalyst.

25 15. The integrated system of claim 14 wherein the first reactor has a reaction zone for carbonylation of an alkyl alcohol with carbon monoxide in a liquid reaction medium.

30 16. The integrated system of claim 15 comprising a heat exchanger for transferring heat from a product produced in the first reactor to a steam condensate stream.

17. The integrated system of claim 16 comprising heat exchange equipment for transferring heat from the steam condensate stream to a vinyl acetate azeotrope column feed stream.
- 5 18. The integrated system of claim 16 comprising heat exchange equipment for transferring heat from the steam condensate stream to a reboil stream of a light ends column in the purification section for purifying the vinyl acetate.
- 10 19. The integrated system of claim 16 comprising heat exchange equipment for transferring heat from the steam condensate stream to a reboil stream used in conjunction with a finishing column in the purification section for purifying the vinyl acetate.
- 15 20. The integrated system of claim 16 comprising heat exchange equipment for transferring heat from the steam condensate stream to at least a portion of the acetic acid used to produce vinyl acetate.